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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/739,529	12/15/2000	Alan Robinson	537-1038	2872

7590 05/23/2003

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EXAMINER

WANG, GEORGE Y

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/739,529

Applicant(s)

ROBINSON ET AL.

Examiner

George Y. Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (U.S. Patent No. 6,317,549) in view of Imoto (U.S. Patent No. 5,742,722) and Hodges et al. (U.S. Patent No. 4,838,643, from hereinafter "Hodges").

Brown discloses an optical fiber used in optical transmission systems with an optical amplifier with a doped fiber core and cladding area surrounding the core

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(abstract). The amplifier has an input (fig. 7, ref. 30-1) and output (fig. 7, ref. 30-2), a mode field diameter of $8.4\text{ }\mu\text{m}$ (col. 5, lines 60-66), and a cut-off wavelength at which the fiber becomes single mode (col. 3, lines 60-64) at a value less than 1450nm (col. 5, lines 60-66). However, Brown fails to specifically disclose the gain fibers. Also, the reference fails to specifically teach a mode field diameter that is greater than $10\text{ }\mu\text{m}$.

Imoto discloses the use of a gain fiber with a mode field diameter of $8.8\text{ }\mu\text{m}$ at a wavelength of 1550 nm (col. 7, lines 54-64).

Hodges discloses a mode field diameter that is greater than $10\text{ }\mu\text{m}$ and less than $14\text{ }\mu\text{m}$ (col. 1, lines 34-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used gain fiber since gain fibers, according to Applicant, conventionally refer to a design of the fiber. And being that the fiber are designed to meet certain requirements, it can be fully recognized that gain fibers, as admitted by Applicant, have designed advantages for low noise and efficient conversion of pump energy and for flat characteristics of gain to wavelength in the presence of a pump signal (Imoto, col. 5, line 34). Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a mode field diameter that is greater than $10\text{ }\mu\text{m}$ and less than $14\text{ }\mu\text{m}$ since such a limitation is well known in the art and widely used for single mode optical fibers in telecommunications (Hodges, col. 1, lines 34-36).

Response to Arguments

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3. Applicant's arguments filed 07 April 2003 have been fully considered but they are not persuasive.

Applicant's main argument is that there is novelty in the use of gain fibers in the claimed invention. However, Examiner notes that the use of gain fibers is not novel and that they are conventionally used only to meet to certain design requirements. In fact, this is clearly acknowledged by Applicant when he states, "fibers for use in optical amplifiers have extremely different *design* requirements" and "gain fibers are *typically designed...*" (italics inserted by Examiner for emphasis). Furthermore, Examiner asserts that these requirements are not "extremely" different. For example, Applicant argues that transmission fibers are typically, and not exclusively, designed for low loss and reduction in interferences and that gain fibers are usually designed for low noise and efficient conversion of light energy. To the Examiner, low noise and efficient light energy conversion is functionally the same as interference reduction and low optical loss. Therefore, not only is Applicant's argument based on different design requirement weak, it is faulty when the actual requirements are seen as practically identical in their respective applications.

In regards to the use of the Hodges references. Applicant fails to understand how the use of the reference relates to gain fibers. Examiner's use of Hodges is not for gain fibers since the Imoto reference is adequate enough (see above). Instead, the reference is cited to highlight that a mode field diameter between 10-14 μm is conventional.

Thus, Examiner holds to the validity of the references used and maintains rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

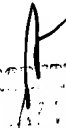
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gw
May 12, 2003


ROBERT H. KIM
SUPERVISOR OF EXAMINER
TECHNOLOGY CENTER 2800